

Amendments to the Claims:

1. (Previously Presented) A process for isolating milk proteins from milk or whey comprising the following steps:

- a) the milk or the whey is sterilized and defatted;
- b) the milk fraction derived from step a) is passed over a cation-exchange resin conditioned in an elution column;
- c) the fraction retained on the resin is eluted with an aqueous salt solution;
- d) the eluate resulting from step c) is desalted and sterilized and wherein
 - α) the cation-exchange resin is a resin grafted onto strong acid functional groups;
 - β) during step b), the binding parameters have the following values:
 - BV is between 50 and 400;
 - SV is between 2 and 40 h⁻¹;
 - LV is greater than or equal to 1 m/h and less than or equal to 5 m/h.
 - γ) during step c), the elution parameters have the following values:
 - BV is between 1.5 and 7;
 - LV is less than 1 m/h.

2. (Previously Presented) The process as claimed in claim 1, wherein the starting material is cows' milk.

3. (Previously Presented) The process as claimed in claim 1, wherein the starting material is a casein acid whey.

4. (Previously Presented) The process as claimed in claim 1, wherein the cation-exchange resin is a resin grafted by acid functional groups with a pKa ≤ 2 having an ion-exchange capacity of between 200 and 1000 µE/ml.

5. (Previously Presented) The process as claimed in claim 4, wherein the resin is grafted by sulfonate salt or sulfonic acid functional groups.

6. (Previously Presented) The process as claimed in claim 5, wherein the resin is grafted by propyl sulfonate or propylsulfonic functional groups.

7. (Previously Presented) The process as claimed in claim 1, wherein the particle size of the resin is between 100 μm and 900 μm .

8. (Currently Amended) The process as claimed in claim 1, wherein during step b) of binding of the raw material, one or more of the following conditions are met: A process for isolating milk proteins from milk or whey comprising the following steps:

- a) the milk or the whey is sterilized and defatted;
- b) the milk fraction derived from step a) is passed over a cation-exchange resin conditioned in an elution column;
- c) the fraction retained on the resin is eluted with an aqueous salt solution;
- d) the eluate resulting from step c) is desalted and sterilized and wherein
 - $\alpha)$ the cation-exchange resin is a resin grafted onto strong acid functional groups;
 - $\beta)$ during step b), the binding parameters have the following values:
 - BV is between 80 and 150;
 - SV is between 5 and 40 h^{-1} ;
 - LV is between 3 and 4.3 m/h.
- $\gamma)$ during step c), the elution parameters have the following values:
 - BV is between 1.5 and 7;
 - LV is less than 1 m/h.

9. (Currently Amended) The process as claimed in claim 1, wherein the following conditions are met during step b): A process for isolating milk proteins from milk or whey comprising the following steps:

- a) the milk or the whey is sterilized and defatted;
- b) the milk fraction derived from step a) is passed over a cation-exchange resin conditioned in an elution column;
- c) the fraction retained on the resin is eluted with an aqueous salt solution;
- d) the eluate resulting from step c) is desalted and sterilized and wherein
 - $\alpha)$ the cation-exchange resin is a resin grafted onto strong acid functional groups;
 - $\beta)$ during step b), the binding parameters have the following values:
 - BV is between 80 and 120;
 - SV is between 8 and 15 h^{-1} ;

- LV is between 3 and 4.8 m/h.

during step c):

- BV is between 3 and 7;

- LV is less than 1 m/h.

10. (Previously Presented) The process as claimed in claim 1, wherein during step b), the resin is conditioned in a column whose temperature is kept between 2 and 15°C.

11. (Currently Amended) The process as claimed in claim 1, A process for isolating milk proteins from milk or whey comprising the following steps:

a) the milk or the whey is sterilized and defatted;

b) the milk fraction derived from step a) is passed over a cation-exchange resin conditioned in an elution column;

c) the fraction retained on the resin is eluted with an aqueous salt solution;

d) the eluate resulting from step c) is desalted and sterilized and wherein

α) the cation-exchange resin is a resin grafted onto strong acid functional groups;

β) during step b), the binding parameters have the following values:

- BV is between 50 and 400;

- SV is between 2 and 40 h⁻¹;

- LV is greater than or equal to 1 m/h and less than or equal to 5 m/h,

wherein during step c) for elution of the bound proteins, at least one of the following conditions is met:

- BV is between 3 and 5;

- LV is less than 0.5 m/h.

12. (Previously Presented) The process as claimed in claim 1, wherein during step c), the resin is conditioned in a column whose temperature is kept between 2 and 15°C.

13. (Currently Amended) The process as claimed in claim 1, wherein the aqueous saline solution used for carrying out the invention is a solution of a chloride of an alkali metal chosen from K+, Na+, [[Ca+]] Ca²⁺, [[Mg+]] Mg²⁺.

14. (Previously Presented) The process as claimed in claim 12, wherein the aqueous saline solution is an aqueous sodium chloride solution.

15. (Previously Presented) The process as claimed in claim 14, wherein the aqueous saline solution has a concentration of between 2 and 25% by weight of salt per weight of liquid.

16. (Previously Presented) The process as claimed in claim 14, wherein the aqueous saline solution has an ionic strength of between 1 and 2 M.

17. (Previously Presented) The process as claimed in claim 1, wherein the pH of the aqueous saline solution for elution is between 6 and 7.

18. (Previously Presented) The process as claimed in claim 1, wherein the desalting is carried out by ultrafiltration and diafiltration.

19. (Previously Presented) The process as claimed in claim 18, wherein the ultrafiltration and diafiltration treatments are carried out until a permeate having a conductivity of less than 15 mS is obtained.

20. (Previously Presented) The process as claimed in claim 1, wherein the sterilization is carried out by microfiltration.

21. (Previously Presented) The process as claimed in claim 1, wherein the desalted and sterilized product is dried so as to obtain the milk fraction derived from the process of the invention in the form of a powder.

22. (Previously Presented) A milk protein fraction obtained by the process according to claim 1.

23. (Previously Presented) A milk protein fraction having the following characteristics:

- a protein content of greater than 90%,
- a mineral salt content of less than 1%,

- a fat content of less than 1%,
- a lactose content of less than 1%,
- a moisture content of less than 5%,
- a lactoferrin content of less than 80%,
- a solution of the milk protein fraction with a concentration of 2% has a pH of between 6 and 7.5,
- a UV-visible spectrophotometric purity defined by an OD⁴¹²/OD²⁸⁰ ratio <0.15,
- contains at least 1% of proteins having an isoelectric point greater than or equal to 8, the percentages being given by weight relative to the weight of dry matter content of the milk fraction.

24. (Previously Presented) The milk protein fraction as claimed in claim 23, wherein it corresponds to at least one of the following characteristics:

- a protein content of greater than 95%,
- a mineral salt content of less than 0.5%,
- a fat content of less than 0.5%,
- a lactose content of less than 0.5%,
- a moisture content of less than 4%,
- a lactoferrin content of less than 80%,
- a solution of the milk protein fraction with a concentration of 2% has a pH of between 6 and 7.2,
- a UV-visible spectrophotometric purity defined by an OD⁴¹²/OD²⁸⁰ ratio <0.1,
- contains at least 1% of proteins having an isoelectric point of between 8.2 and 8.7.

25. (Previously Presented) The milk protein fraction as claimed in claim 23 which is derived from cows' milk.

26. (Previously Presented) The milk protein fraction as claimed in claim 25, comprising at least 40% of proteins having an isoelectric point greater than or equal to 8.

27. (Previously Presented) The milk protein fraction as claimed in claim 25 having a lactoferrin content greater than or equal to 30% and a lactoperoxidase activity greater than or equal to 120 2,2'-Azino-bis-(3-ethyl Benzo Thiazoline 6-Sulfonic acid) units per mg of isolate.

28. (Previously Presented) The milk protein fraction as claimed in claim 22 which is derived from a casein acid whey.

29. (Previously Presented) A combination of a milk protein fraction according to Claim 22 with calcium.

30. (Previously Presented) The combination as claimed in claim 29, additionally including vitamin D.

31. (Previously Presented) A food composition, comprising a milk protein fraction according to claim 22.

32. (Previously Presented) A dietary kit comprising a milk protein fraction as claimed in claim 22 wherein said milk protein fraction is a powder.

33. (Previously Presented) A dietary milk prepared from a milk protein fraction as claimed in claim 22.

34. (Previously Presented) A food intended for the prevention of a pathology selected from: growth retardation, osteoporosis, bone fragility, bone fractures, rheumatism, osteoarthritis, periodontal diseases, and intestinal barrier deficiency, or intended to promote the growth of osteoblasts and/or of intestinal cells and/or to inhibit the growth of preosteoclasts, said food being prepared from a milk protein fraction as claimed in claim 22.

35. (Cancelled)

36. (Currently Amended) A pharmaceutical composition, comprising at least one milk protein fraction as claimed in claim 22 and a pharmaceutically acceptable edible carrier.

37. (Previously Presented) A medicament intended for the prevention and/or treatment of a pathology selected from: growth retardation, osteoporosis, bone fragility, bone fractures, rheumatism, osteoarthritis, periodontal diseases, and intestinal barrier deficiency, or

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intended to promote the growth of osteoblasts and/or of intestinal cells and/or to inhibit the growth of preosteoclasts, said medicament comprising a milk protein fraction as claimed in claim 22.

38. (Previously Presented) A method for preparing a medicament intended to improve the absorption of calcium in the body of an individual, wherein said method includes the step of introducing a milk protein fraction as claimed in claim 22, into said medicament.

39. (Cancelled)

40. (Previously Presented) A hygiene product comprising at least one milk protein fraction as claimed in claim 22.